

THE REHABILITATION OF THE TAMPA BAY ESTUARY, FLORIDA, USA. AS AN EXAMPLE OF SUCCESSFUL INTEGRATED COASTAL MANAGEMENT By Roy R. Lewis III, P. Clark, W.K. Fehring, H.S. Greening, R. Johansson and R.T. Paul: Lewis Environmental Services, Inc., P.O. Box 20005, Tampa, FL, US 33622-0005, UNITED STATES.—The Tampa Bay ecosystem includes 967 km<sup>2</sup> of primarily unvegetated estuarine waters with an average depth of 3.5 m, 72 km<sup>2</sup> of emergent coastal wetlands, and a 5700 km<sup>2</sup> watershed occupying a total area of 6739 km<sup>2</sup>. Approximately 10% of the 967 km<sup>2</sup> of open water area (101 km<sup>2</sup>) have shallow (<2 m) shelves vegetated with seagrasses. The watershed supports a population (ca. 1995) of 2 million within the cities of Tampa, St. Petersburg, Clearwater, Bradenton and surrounding suburban communities. The estuary has been a major seaport for over 100 years. Currently the port is rated as the tenth largest in the United States in overall tonnage (52 million tons/year). The largest exports are phosphate rock and fertiliser products, while the largest imports are petroleum and coal. The main channel connecting the port to the Gulf of Mexico is 71 km long and is maintained at a depth of 13 m. An additional 49 km of side channels serve a variety of functions and are maintained at depths ranging from 10-13 m. Channel depths are maintained by periodic dredging using contained and open-water disposal of dredged material. Historical modifications of the estuary to facilitate coastal development, including port construction, have resulted in the excavation or filling of 44% of the emergent coastal wetlands (i.e., tidal marshes and mangrove forests, originally estimated as covering 108 km<sup>2</sup>). Similar activities, combined with domestic and industrial effluent disposal in the estuary had resulted in the disappearance of 81 % of the sea grass meadows (original coverage estimated at 310 km<sup>2</sup>) by 1980. Associated with the loss of these habitats were similar levels of declines in recreational and commercial fish and shellfish harvests, and populations of threatened and endangered wildlife species. Beginning three decades ago, local environmental regulatory agencies and citizen sponsored non-governmental organisations (NGOs) began an informal integrated coastal management (ICM) process originating from expressed concerns from citizens about degraded water quality and coastal habitats. This led to an upgrade of domestic sewage treatment for most of the estuary to advanced sewage treatment (i.e., nutrient removal) and successful coastal habitat rehabilitation projects. More than 14 km<sup>2</sup> of seagrass meadows have naturally recovered as a result of these efforts. More formal ICM began in 1984 and continues today as a series of citizen-initiated coordination and management committees under the auspices of the local regional planning council.